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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/822,112

03/30/2001

David R. Reuveni

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08/02/2004

LSI LOGIC CORPORATION

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MS: D-106 LEGAL

MILPITAS, CA 95035

EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/822,112

Applicant(s)

REUVENI, DAVID R.

Examiner

Lawrence B Williams

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 10-16 is/are rejected.
- 7) ☒ Claim(s) 4, 9 and 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Priority

2. It is noted that this application claims the benefits of a U.S. Provisional Application filed on July 17, 2000. Examiner suggests applicant fill in the proper application no.
3. It is noted that this application may relate to a co-pending application filed concurrently with this application. Examiner suggests applicant fill in the proper application no.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-3, 5-8, 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US Patent 5,850,422) in view of Malek (US Patent 3,983,498).

(1) With regard to claim 1, Chen discloses in Fig. 1, an apparatus comprising: an analog circuit (12, 14) configured to generate a plurality of samples of an input signal in response to a plurality of phases of a reference clock and a digital circuit (abstract; col. 7, line 65 - col. 2, line 31). Chen does not however disclose a digital circuit configured to measure a width of a symbol in the input stream in response to a plurality of samples and the plurality of phases of the reference clock and adjust the measured width in response to a correction signal.

However Malek discloses in Figs. 1 and 2, a digital circuit configured to measure a width of a symbol in the input stream (12) in response to a plurality of samples and the plurality of phases of the reference clock and adjust the measured width in response to a correction signal (26) (col. 2, lines 7-55).

One skilled in the art would have clearly recognized that a digital circuit configured to measure a width of a symbol in the input stream in response to a plurality of samples and the plurality of phases of the reference clock and adjust the measured width in response to a correction signal is a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Malek to modify the invention of Chen as a method of providing an improved phase lock loop with less phase jitter and reduced lock range with improved access time for use in a clock recovery system (col. 1, lines 31-46).

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(2) With regard to claim 2, Malek also discloses in Figs. 1 and 2, wherein the digital circuit comprises a width counter circuit (10) configured to measure the width of the signal (col. 2, lines 7-12).

(3) With regard to claim 3, Malek also discloses wherein the width counter circuit is configured to measure the width of the symbol in response to a number of edges of a predetermined one of said plurality of phases that occur between a first edge and a second edge of said input signal (col. 2, lines 7-12).

(4) With regard to claim 5, Malek also discloses wherein the digital circuit is configured to determine whether the measured symbol width represents a logic HIGH or a logic LOW (col. 2, lines 31-55).

(5) With regard to claim 6, Malek also discloses wherein the correction signal comprises a HIGH data correction signal and a LOW data correction signal (col. 2, lines 31-55).

(6) With regard to claim 7, Malek also discloses wherein the correction signal is generated in response to a number of width measurements (col. 2, lines 7-15; lines 31-55).

(7) With regard to claim 8, Malek also discloses wherein the digital circuit is configured to generate a correction signal when in a locked state (col. 2, lines 49-55).

(8) With regard to claim 10, Malek also discloses wherein the correction signal is configured to compensate for a fall time of the input signal (col. 2, lines 31-55).

(9) With regard to claim 11, Malek also discloses wherein the correction signal is configured to compensate for a fall time of the input signal (col. 2, lines 31-55).

(10) With regard to claim 12, claim 12 inherits all limitations of claims 1 as disclosed by Chen in combination with Malek, above.

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(11) With regard to claim 13, claim 13 inherits all limitations of claims 1 and 12, above as the method implemented by the apparatus and/or devices as disclosed by Chen in combination with Malek above.

(12) With regard to claim 14, Malek also discloses detecting an edge of the symbol in the input symbol (col. 2, lines 7-12).

(13) With regard to claim 15, Malek also discloses determining a position of the edge with respect to the plurality of phases (col. 2, lines 7-55).

(14) With regard to claim 16, Malek also discloses calculating a current length of the input signal (col. 2, lines 7-16).

Allowable Subject Matter

7. Claims 4, 9, and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 703-305-6969. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
July 21, 2004



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600